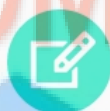
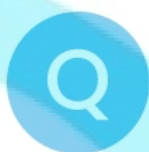


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## QUIZZES

### Practice Test-1(Chemical Bonding)



10 Questions



7 min

#### Topics

Atomic Size, Trends in IE, EA and EN, Types of Bonds (Lewis Concept), Energetics of Bond Formation

Start Quiz

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

06 : 57



1/10



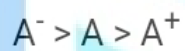
7 min



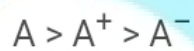
Hint

Q : Which of the following is correct relation for atomic radius

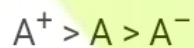
A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 53



2/10



7 min



Hint

Q : Along period of periodic table shielding effect

A

Increases

B

Decreases

C

Remains constant

D

First increases then decreases

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 49



3/10



7 min



Hint

Q : An element with highest first ionization energy

A

Nitrogen

B

Boron

C

Oxygen

D

Beryllium

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 44



4/10



7 min



Hint

Q : Which of following does not affect I.E in group

A

Shielding Effect

B

Effective Nuclear charge

C

Size of atom

D

Nature of orbital

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 40



5/10



7 min



Hint

Q : The valence shell is

A

The highest energy level occupied by electrons

B

The set of orbitals used to make triple bonds

C

The orbitals belonging to the entire molecule

D

The lowest energy level occupied by electrons

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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6

7

06 : 34



6/10



7 min



Hint

Q : Which of the following have their outer most shell complete in atomic form

A

Noble gases

B

Alkali metals

C

Coinage metals

D

Gun metals

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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6

7

06 : 30



7/10



7 min



Hint

Q : An atom loses or gains electrons, to

A

Gain stability

B

Form a bond

C

Complete its outermost shell

D

All are accurate justifications

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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4

5

6

7



06 : 25



8/10



7 min



Hint

Q : The compound which have three types of bonds is

A

$\text{NH}_3$

B

$\text{H}_2\text{O}$

C

$\text{NH}_4\text{Cl}$

D

$\text{NaCl}$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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06 : 21



9/10



7 min



Hint

Q : A compound which has all the three types of chemical bonds

A

$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

B

$\text{NaBH}_4$

C

$\text{NH}_4\text{Cl}$

D

All of these

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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8

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10

06 : 16



10/10



7 min



Hint

Q : Most predominantly ionic compounds are obtained by the combination of elements of groups

A

IVA and VIIIA

B

IA and VIIA

C

IIA and VIA

D

IIA of VA

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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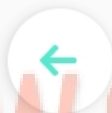
6

7

8

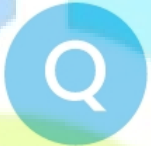
9

10



## QUIZ RESULT

Practice Test-1(Chemical Bonding)



10



7 min



01-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT





## Practice Test-1(Chemical Bonding)



Correct



Unattempted

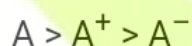
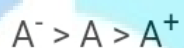


Incorrect



1/10

Q : Which of the following is correct relation for atomic radius



Explanation

SAEED MDCAT TEAM

Cation is always smaller than neutral atom and anion is always larger than neutral atom



SAEEDMDCAT

1

2

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6

7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



2/10

Q : Along period of periodic table shielding effect

A

Increases

B

Decreases

C

Remains constant

D

First increases then decreases

Explanation

Along the period shielding effect does not change, because these are electrons of inner shells which do not change while present in valence shell

1

2

3

4

5

6

7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



3/10

Q : An element with highest first ionization energy

A

Nitrogen

B

Boron

C

Oxygen

D

Beryllium

Explanation

Along the period IE increases from left to right but there are abnormal trends

$VA > VIA, IIA > IIIA$

Due to stable electronic configuration

1

2

3

4

5

6

7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



4/10

Q : Which of following does not affect I.E in group

A

Shielding Effect

B

Effective Nuclear charge

C

Size of atom

D

Nature of orbital

Explanation

Ionization energy does not depend upon nature of orbital in the group because all the elements in the group have same orbital

1

2

3

4

5

6

7





## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



5/10

Q : The valence shell is



The highest energy level occupied by electrons



The set of orbitals used to make triple bonds



The orbitals belonging to the entire molecule



The lowest energy level occupied by electrons

Explanation

The valence shell is the highest energy level occupied by electrons



SAEEDMDCAT

1

2

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6

7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



6/10

Q : Which of the following have their outer most shell complete in atomic form



Noble gases



Alkali metals



Coinage metals



Gun metals

Explanation

Only noble gases in periodic table which have complete outermost shell.



SAEEDMDCAT

1

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7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



7/10

Q : An atom loses or gains electrons, to

A

Gain stability

B

Form a bond

C

Complete its outermost shell

D

All are accurate justifications

Explanation

When an atom loses or gains an electron it produces ions which react to form bond in this way atom gains stability.

1

2

3

4

5

6

7



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



8/10

Q : The compound which have three types of bonds is

A



B



C



D



Explanation

The compound which have three types of bonds is  $\text{NH}_4\text{Cl}$

$\text{NH}_4\text{Cl}$  = Nitrogen makes 3-covalent and one coordinate covalent bond.  $\text{NH}_4^+$  ion makes ionic bond with chloride( $\text{Cl}^-$ ) ion.



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



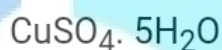
Incorrect



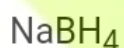
9/10

Q : A compound which has all the three types of chemical bonds

A



B



C



D

All of these

Explanation

All these compounds have ionic bond, covalent bond and co-ordinate covalent bond

Ionic bond in  $\text{Cu}^{+2}$  and  $\text{SO}_4^{-2}$ , Covalent bond in water molecules as well as in sulphate ion, while coordinate covalent bond formed between water molecules with  $\text{Cu}^{+2}$  and sulphate ion.

4

5

6

7

8

9

10



## Practice Test-1(Chemical Bonding)



Correct



Unattempted



Incorrect



10/10

Q : Most predominantly ionic compounds are obtained by the combination of elements of groups

A

IVA and VIIIA

B

IA and VIIA

C

IIA and VIA

D

IIA of VA

Explanation

Strongest ionic bond formed between group IA & VIIA elements, although group IIA & VIA elements also form ionic bond.

4

5

6

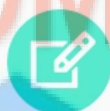
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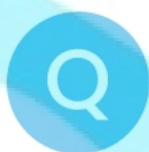
10

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## QUIZZES

### Practice Test-2(Chemical Bonding)



10 Questions



7 min

#### Topics

VSEPR Theory, VBT, Hybridization

Start Quiz

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

06 : 57



1/10



7 min



Hint

Q : Which one has lone pair with central atom

A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7



06 : 53



2/10



7 min



Hint

Q : All of the following pairs have same shapes except

A

$\text{SO}_2$  and  $\text{AlCl}_3$

B

$\text{CCl}_4$  and  $\text{SiCl}_4$

C

$\text{H}_2\text{S}$  and  $\text{H}_2\text{O}$

D

$\text{NH}_3$  and  $\text{PH}_3$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 48



3/10



7 min



Hint

Q :

Bond angle in paraffins is

A

180°

B

105°

C

120°

D

109.5°

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 44



4/10



7 min



Hint

Q : Which one of the following has maximum bond angle

A



B



C



D



**SAEED MDCAT**

SAEED MDCAT TEAM



SAEEDMDCAT

1

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5

6

7

06 : 39



5/10



7 min



Hint

Q : Among following molecules, which has different number of  $\pi$ -electrons than others

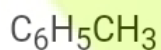
A



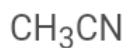
B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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5

6

7

06 : 35



6/10



7 min



Hint

Q : Hybridization is the extended form of \_\_\_\_\_ theory

A

VSEPR

B

Lewis

C

Molecular orbital

D

Valence bond

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 30



7/10



7 min



Hint

Q : If  $n$  atomic orbitals mix together with different shapes and energy, then no of bonds formed will be

A

$n$

B

$2n$

C

$n^2$

D

Cannot be predicted

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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4

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6

7

06 : 26



8/10



7 min



Hint

Q : When water donates its electron pair to hydrogen ion to form hydronium ion, hybridization is changed from

A

$sp^2$  to  $sp^3$

B

$sp^3$  to  $sp^2$

C

$sp^3$  to  $sp$

D

Remains unchanged

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

6

7

8

9

10

06 : 20



9/10



7 min



Hint

Q :

Which are the species in which central atom undergoes  $sp^3$  hybridization?

(i)  $\text{SnCl}_2$    (ii)  $\text{NF}_3$    (iii)   (iv)  $\text{H}_2\text{S}$

Select the correct answer using the code given below

A

i and ii

B

ii, iii and iv

C

i, iii and iv

D

i, ii and iii

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

6

7

8

9

10



06 : 16



10/10



7 min



Hint

Q :

All the atoms are coplanar in the molecule\_\_\_\_\_

A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

5

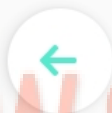
6

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10



## QUIZ RESULT

Practice Test-2(Chemical Bonding)



10



7 min



01-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT





## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



1/10

Q : Which one has lone pair with central atom

A



B



C



D



Explanation

$\text{H}_2\text{O}$  has lone pair with central atom. There are two lone pairs on central oxygen atom in water but on central atom of  $\text{BF}_3$ ,  $\text{CH}_4$  and  $\text{NH}_4^+$  does not have lone pair.

1

2

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6

7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



2/10

Q : All of the following pairs have same shapes except

A

$\text{SO}_2$  and  $\text{AlCl}_3$

B

$\text{CCl}_4$  and  $\text{SiCl}_4$

C

$\text{H}_2\text{S}$  and  $\text{H}_2\text{O}$

D

$\text{NH}_3$  and  $\text{PH}_3$

Explanation

$\text{SO}_2$  ---- triangle pyramidal

$\text{AlCl}_3$  ---- triangular

1

2

3

4

5

6

7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



3/10

Q:

Bond angle in paraffins is

A

180°

B

105°

C

120°

D

109.5°

Explanation

SAEED MDCAT TEAM

Alkane are also called paraffins and have bond angle of 109.5°

1

2

3

4

5

6

7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



4/10

Q : Which one of the following has maximum bond angle

A



B



C



D



Explanation

SAEED MDCAT TEAM

$\text{CO}_2$  has linear structure and angle of  $180^\circ$  which is maximum.



SAEEDMDCAT

1

2

3

4

5

6

7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



5/10

Q : Among following molecules, which has different number of  $\pi$ -electrons than others

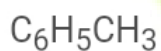
A



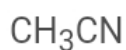
B



C



D



Explanation

Each molecule have 3 pi bonds or six pi electrons, while in methyl cyanide there are 2 pi bonds and 4 pi electrons.

1

2

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7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



6/10

Q : Hybridization is the extended form of \_\_\_\_\_ theory

A

VSEPR

B

Lewis

C

Molecular orbital

D

Valence bond

Explanation

Hybridization is the extended form of Valence bond theory, which was given to solve some problems and limitations of VBT

1

2

3

4

5

6

7





## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



7/10

Q : If  $n$  atomic orbitals mix together with different shapes and energy, then no of bonds formed will be



$n$



$2n$



$n^2$



Cannot be predicted

Explanation

Number of hybrid orbitals is equal to number of bond formed



SAEEDMDCAT

1

2

3

4

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6

7



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



8/10

Q : When water donates its electron pair to hydrogen ion to form hydronium ion, hybridization is changed from

A

$sp^2$  to  $sp^3$

B

$sp^3$  to  $sp^2$

C

$sp^3$  to  $sp$

D

Remains unchanged

Explanation

SAEED MDCAT TEAM

In  $H_2O$   $sp^3$  and in  $H_3O^+$  =  $sp^3$



SAEEDMDCAT

4

5

6

7

8

9

10



## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



9/10

Q :

Which are the species in which central atom undergoes  $sp^3$  hybridization?

- (i)  $\text{SnCl}_2$    (ii)  $\text{NF}_3$    (iii)   (iv)  $\text{H}_2\text{S}$

Select the correct answer using the code given below

A

i and ii

B

ii, iii and iv

C

i, iii and iv

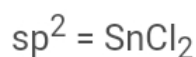
D

i, ii and iii



Explanation

SAEEDMDCAT





## Practice Test-2 (Chemical Bonding)



Correct



Unattempted



Incorrect



10/10

Q :

All the atoms are coplanar in the molecule\_\_\_\_\_

A



B



C



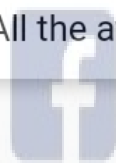
D



Explanation

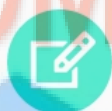
SAEED MDCAT TEAM

All the atoms are coplanar in the molecule  $\text{BF}_3$



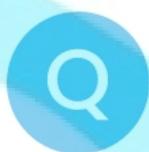
SAEEDMDCAT

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## QUIZZES

### Practice Test-3 (Chemical Bonding)



10 Questions



7 min

#### Topics

Bond Energy and Bond Length, Ionic character of covalent bond (Dipole Moment)

Start Quiz

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

06 : 57



1/10



7 min



Hint

Q : Which one has maximum bond dissociation energy

A

$F_2$

B

$Cl_2$

C

$Br_2$

D

$I_2$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 53



2/10



7 min



Hint

Q : Strongest bond among the following is

A

H-H

B

F-F

C

C-C

D

N-N

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

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6

7

06 : 48



3/10



7 min



Hint

Q : Bond length decreases with

A

Increase in size of atom

B

Increase in the number of bonds between the atoms

C

Decreases in the number of bonds between the atoms

D

Decrease in the s-character

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

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7



06 : 44



4/10



7 min

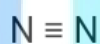


Hint

Q :

The molecule having highest bond energy is

A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 39



5/10



7 min



Hint

Q : Which of the following has minimum bond dissociation energy

A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 35



6/10



7 min



Hint

Q : Which one of the following molecule is polar



$\text{BF}_3$



$\text{CCl}_4$



$\text{SO}_2$



$\text{CO}_2$

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

1

2

3

4

5

6

7

06 : 30



7/10



7 min



Hint

Q : Ionic compounds do not show the phenomenon of isomerism because bonds are

A

Directional and rigid

B

Non directional and rigid

C

Non directional and non rigid

D

All of the above

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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06 : 26



8/10



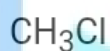
7 min



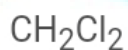
Hint

Q :  $\text{CH}_4$  is a nonpolar molecule. Which of the following similar molecules is also non-polar

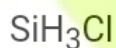
A



B



C



D



SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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06 : 20



9/10



7 min



Hint

Q : Greater the dipole moment

A

Greater is the ionic nature

B

Smaller the ionic nature

C

Lesser is the polarity

D

Linear the structure

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

4

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06 : 16



10/10



7 min



Hint

Q :  $\text{NH}_3$  has a net dipole moment but  $\text{BF}_3$  has zero dipole moment because of

A

B is less electronegative than N

B

F is more electronegative than H

C

$\text{BF}_3$  is pyramidal while  $\text{BF}_3$  is trigonal planar

D

$\text{NH}_3$  is pyramidal while  $\text{BF}_3$  is trigonal planar

SAEED MDCAT

SAEED MDCAT TEAM



SAEEDMDCAT

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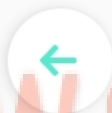
6

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## QUIZ RESULT

Practice Test-3(Chemical Bonding)



10



7 min



01-May-2021



0 sec



0/10



0.0%

SAEED MDCAT

Result Detail

SAEED MDCAT TEAM



SAEEDMDCAT







## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



1/10

Q : Which one has maximum bond dissociation energy

A



B



C



D



Explanation

SAEED MDCAT TEAM

Bond energy ( $\text{kJmol}^{-1}$ )  $F_2 = 155$ ,  $Cl_2 = 242$ ,  $Br_2 = 193$ ,  $I_2 = 151$



SAEEDMDCAT

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



2/10

Q : Strongest bond among the following is

A

H-H

B

F-F

C

C-C

D

N-N

Explanation

smaller the size stronger the bond

Bond energy kJ/mol

H-H = 436, C-C = 348, F-F =  
154, N-N = 163

1

2

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



3/10

Q : Bond length decreases with

A

Increase in size of atom

B

Increase in the number of bonds between the atoms

C

Decreases in the number of bonds between the atoms

D

Decrease in the s-character

Explanation

Greater the bond order shorter the bond length



SAEEDMDCAT

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect

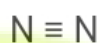


4/10

Q:

The molecule having highest bond energy is

A



B



C



D



Explanation

$\text{N} \equiv \text{N}$  has non polar nature while among other,  $\text{C} \equiv \text{O}$  has polarity as well as smaller size of O atom.

1

2

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



5/10

Q : Which of the following has minimum bond dissociation energy



$I_2$



$Br_2$



$F_2$



$Cl_2$

Explanation

SAEED MDCAT TEAM

Larger the size of atom smaller the bond energy.



SAEEDMDCAT

1

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



6/10

Q : Which one of the following molecule is polar

A



B



C



D



Explanation

$\text{SO}_2$  molecule is polar with one lone pair on central sulphur atom but  $\text{BF}_3$ ,  $\text{CCl}_4$  and  $\text{CO}_2$  are nonpolar molecules with regular geometries with zero dipole moments.

1

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



7/10

Q : Ionic compounds do not show the phenomenon of isomerism because bonds are

A

Directional and rigid

B

Non directional and rigid

C

Non directional and non rigid

D

All of the above

Explanation

Ionic compounds do not show the phenomenon of isomerism because ionic bonds are non-directional and non-rigid.

4

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



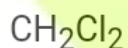
8/10

Q :  $\text{CH}_4$  is a nonpolar molecule. Which of the following similar molecules is also non-polar

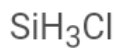
A



B



C



D



Explanation

SAEED MDCAT TEAM

Explanation: both have net dipole moment zero due to regular geometry



SAEEDMDCAT





## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



9/10

Q : Greater the dipole moment



Greater is the ionic nature



Smaller the ionic nature



Lesser is the polarity



Linear the structure

# SAEED MDCAT

## SAEED MDCAT TEAM



## SAEEDMDCAT

4

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## Practice Test-3 (Chemical Bonding)



Correct



Unattempted



Incorrect



10/10

Q :  $\text{NH}_3$  has a net dipole moment but  $\text{BF}_3$  has zero dipole moment because of

A

B is less electronegative than N

B

F is more electronegative than H

C

$\text{BF}_3$  is pyramidal while  $\text{BF}_3$  is trigonal planar

D

$\text{NH}_3$  is pyramidal while  $\text{BF}_3$  is trigonal planar

Explanation

SAEED MDCAT TEAM

$\text{NH}_3$  is pyramidal (irregular shape) while  $\text{BF}_3$  is trigonal planar (regular shape)